

CLAIMS

We claim:

1. A roller chain transmission comprising a roller chain having interleaved pairs of inner and outer plates, cylindrical bushings fixed to bushing holes in the inner plates, pins rotatable in said bushings and fixed to pin holes in the outer plates, rollers rotatable on said bushings, and a toothed sprocket meshing with the roller chain,

wherein the an outer diameter D of the rollers, the outer diameter d of the pins and the height H of the inner plates satisfies the following relationships with respect to the pitch P of the roller chain:

$$0.72P \leq D \leq 0.79P$$

$$0.40P \leq d \leq 0.44P$$

$$0.96P \leq H$$

and

wherein the teeth of the sprocket have an asymmetric shape in the chain entering side and the chain leaving side with respect to a tooth center line, and, if a radius of an arc of the tooth gap bottom is defined as $R1$, the chain entering side tooth flank radius is defined as $R2$, and the radius of an arc of the chain entering side of the tooth head portion is defined as $R3$, the sprocket satisfies the following relationships:

$$0.505D \leq R1 \leq 0.505D + 0.069^3\sqrt{D}$$

$$P - (0.505D + 0.069^3\sqrt{D}) \leq R2 \leq P - 0.505^3\sqrt{D}$$

$$0.08 \leq R3 \leq 0.13P.$$